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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/357,528	07/19/1999	ARTHUR ZWERN	888124-02	9360

7590 05/08/2003

JOE ZHENG  
SILICON VALLEY PATENT AGENCY  
7394 WILDFLOWER WAY  
CUPERTINO, CA 94014

EXAMINER

WALLACE, SCOTT A

ART UNIT	PAPER NUMBER
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2671

DATE MAILED: 05/08/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Handwritten signature

**Office Action Summary**

Application No.

09/357,528

Applicant(s)

ZWERN ET AL.

Examiner

Scott Wallace

Art Unit

2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 and 32-34 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 11-14, 18-20, 22-26, 28-31, 35 and 36 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 21, 27, 37 and 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Response to Arguments***

1. Applicant's arguments with respect to claims 1, 18, 35 have been considered but are moot in view of the new ground(s) of rejection. Dufour does teach the projection of a 3D continuous sheet, however Dufour does not teach deriving mask images from the projections of the image onto a plane. This is disclosed by Kay et al., U.S. Patent No. 6,377,269 which shows it was well known to project images onto a screen behind it and use this as a mask to then combine the images.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 18 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour U.S. Patent No 6351572 B1 in view of Kay et al., U.S. Patent No. 6,377,269 in further in view of Hashimoto U.S. Patent No. 6434278 B1.

3. As per claims 1, 18 and 35, Dufour discloses

Receiving from a camera a sequence of images taken sequentially and generating around the object (column 2 lines 66-67 and column 3 lines 1-4);

Generating a 3D region from a sequence of mask images (column 2 lines 1-4 and column 3 lines 63-65);

Generating a mesh model from said 3D region using a tree structure (column 2 lines 5-16 and column 3 lines 3-4).

However, Dufour does not disclose generating mask images by projecting the object onto a corresponding one of planes positioned virtually surrounding the object. This is disclosed in Kay et al in column 1 lines 10-20 and column 2 lines 10-27 and fig. 11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to create mask images by projecting them onto a screen as in Kay et al with the system of Dufour because this allows the reproduction of true color filter effects of the transparent areas of the foreground subject (column 2 lines 25-27)

Also, Dufour does not disclose producing a textured 3D model from said mesh model and producing said fully textured 3D model from said mesh model. This is disclosed in Hashimoto column 35-44 and fig 1. It would have been obvious to one of ordinary skill in the art to produce texture models as in Hashimoto with the system of Dufour because Dufour and Hashimoto both disclose generating 3D models from 2D data. Hashimoto just goes a step further by generating a textured model. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a textured model to Dufour system because this would have made the image more realistic (column 3 lines 10-13, Hashimoto).

4. Claims 2-3 rejected under 35 U.S.C. 103(a) as being unpatentable over Dufour in view of Kay et al. further in view of Hashimoto and further in view of Migdal et al., U.S. Patent No. 5991437.

5. As per claim 2, the combination of Dufour, Kay and Hashimoto fail to disclose receiving a reference image captured when a calibration target is in the place of said object; and deriving a camera model of said camera from said reference image. However, Migdal et al discloses this in column 4 lines 60-61 and column 6 lines 1-6. It would have been obvious to one of ordinary skill in the art to use the calibration of Migdal with the combined system of Dufour, Kawamura and Hashimoto because this allowed for the calibration of multiple cameras and to easily recalibrate the new set up for accurate scanning (column 6 lines 10-15).

6. As per claim 3, Migdal et al discloses said calibration target is of round shape and has a center thereof, and wherein said reference image covers only a portion (column 4 lines 60-67 and column 4 lines 1-8) of said calibration target, said portion including said center.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Wallace** whose telephone number is **703-605-5163**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mark Zimmerman**, can be reached at 703-305-9798.

**Any response to this action should be mailed to:**


Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

  
**MARK ZIMMERMAN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**